PATENT CLAIMS

1. An arrangement for producing a blank made of powder, preferably titanium powder, intended for a dental crown or other product for the human body (spacer, dental bridge, implant, etc.) and comprising at least one first apparatus for powder compression and at least one second apparatus with one or more elastic molds having at least one cavity for a punch (block) and the powder used in the initial stage, here referred to as the starting powder, characterized in that the first apparatus comprises a machine operating by impact compaction, and in that said mold or molds is/are arranged, when the cavity is filled with starting powder, to receive one or more impacts effected by the impaction members in the machine and, as a function of the impact or impacts, to generate an isostatic action during compression/ compaction.

2. The arrangement as claimed in patent claim 1, characterized in that the machine/its impaction members operate with a high impaction energy, namely energy (energies) in excess of 900 Nm (Newton meters), for example energy (energies) chosen in the range of 1200-1800 Nm.

3. The arrangement as claimed in patent claim 1 or 2, characterized in that the mold or molds have a high degree of softness, and for example have a Shore number in the range of 10-40, preferably 15-20.

4. The arrangement as claimed in patent claim 1, 2 or 3, characterized in that the compacted blank, the dental crown or the product has a high density (theoretical density), preferably a density of over 95%.

5. The arrangement as claimed in any of the preceding patent claims, characterized in that the mold or molds comprise or consist of silicone (DG-A-Sil; DUBLISIL 15).

6. The arrangement as claimed in any of the preceding patent claims, characterized in that the titanium powder consists of Wah Chang HP (or CP) -325 Mesh.

7. The arrangement as claimed in any of the preceding patent claims, characterized in that the punch (block) has a narrowed or waist-shaped portion.

8. The arrangement as claimed in any of the preceding patent claims, characterized in that the mold comprises top and bottom molds which can be applied in a recess in a die, in that the top and bottom molds are arranged with a first space for positioning of the punch, in that at least one mold of the top and bottom molds has a second space for the powder, in that the top and bottom molds can cooperate in said recess with upper and lower stamps or with a stamp or a support, via their end surfaces, and in that, upon activation of the stamps against one another, or upon activation of the stamp against the support, there is a substantially uniform pressing of the powder against the outer surface of the punch.

9. The arrangement as claimed in patent claim 8, characterized in that a slide-promoting agent is applied in the recess for the top and bottom molds.

10. A device for substantially reducing or eliminating the need for sintering of a blank comprising or consisting of powder material and intended for a dental crown or other product for the human body,

for example a spacer, dental bridge, implant, etc., characterized in that, by means of impact compaction with a high energy per unit of time, the blank has a substantial density, preferably a density of ca. 98% or higher.

11. A method for producing a blank made of powder and intended for a dental crown or other product for the human body, characterized by the following production steps

a) production or selection of a punch (block) with an outer shape corresponding to the inner shape of the blank,

b) application of the punch and starting powder in the inner space of the mold of elastic material,

c) application of the mold with the punch and the starting powder in an impact-type compaction machine,

d) transfer of high energy per unit of time to the mold in the machine,

e) distribution of the transmitted energy by means of an isostatic function which is generated by means of the mold,

f) sintering of the compressed powder for a relatively short time, preferably a time of 30 minutes to 2 hours, in a sintering unit operating with or without a vacuum function.

12. A product in the form of a blank for a dental crown or other product for the human body, for example a spacer, implant, dental bridge, etc., and comprising compressed powder, preferably titanium powder, characterized in that the blank

has a high density, for example a density (theoretical density) of 90% or higher.

13. The product as claimed in patent claim 12, characterized in that the density is chosen in the range of 95-99.5%.

14. Use of a blank for a dental crown or other product for the human body comprising or consisting of compressed or compacted material powder, preferably titanium powder, characterized in that an impact-type compaction machine effecting a high energy per unit of time is used for compressing or compacting the powder.